

WHAT IS CLAIMED IS:

1. A recording apparatus having a first recording mode for recording additional information in a cyclic manner in a unit of m tracks (m is an integer of 2 or greater) and recording an encoded image signal on $n \times m$ tracks (n is an integer of 1 or greater) per one frame and a second recording mode for recording the additional information and the encoded image signal on $n \times m/2$ tracks per one frame, said apparatus newly recording an image signal onto a recording medium on which the encoded image signal is recorded in the second recording mode, said apparatus comprising:

encoding means for encoding an input image signal;

additional information generation means for generating the additional information;

recording means for recording the image signal encoded by said encoding means and the additional information generated by said additional information generation means onto the recording medium; and

control means for controlling the recording means to start recording from a track at a head of the $n \times m$ tracks on which the image signal for two frames is recorded, in the case where the image signal and the additional information are newly recorded in said second recording means onto the

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recording medium.

2. An apparatus according to claim 1, further
comprising reproduction means for reproducing the
5 image data and the additional information from the
recording medium, wherein said control means
determines recording start timing based on the
additional information reproduced by the reproduction
means.

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3. An apparatus according to claim 2, wherein
said control means determines the recording start
timing based on the additional information reproduced
from a predetermined number of tracks immediately
15 before a recording start position.

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4. An apparatus according to claim 2, wherein
said control means detects a track phase in the $n \times m$
tracks based on the additional information reproduced
from a track immediately before a recording start
position, and determines the recording start timing
based on the track phase.

5. An apparatus according to claim 1, wherein
25 the additional information is track pair number
information whose value varies every two tracks.

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6. An apparatus according to claim 1, wherein
the additional information contains pilot frame
information indicating a recording state of a pilot
signal which is recorded while being multiplexed onto
5 the image signal.

7. An apparatus according to claim 1, wherein
said additional information generation means
generates the additional information whose contents
10 vary every track, in a cyclic manner in a unit of the
m tracks.

8. An apparatus according to claim 1, further
comprising image capturing means for capturing an
15 image of an object and outputting an image signal to
said encoding means.

9. A recording apparatus for halfway recording
a new image signal obtained by encoding an image
20 signal of an image captured by an image capturing
section, onto a recording medium on which additional
information is recorded in a cyclic manner in a unit
of m tracks (m is an integer of 2 or greater) with an
encoded image signal being recorded on $n \times m/2$ tracks
25 per one frame, wherein the halfway recording is
performed in a unit of 2 frames.

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10. A recording apparatus for halfway recording
a new image signal obtained by encoding an image
signal of an image captured by an image capturing
section, onto a recording medium on which additional
5 information is recorded in a cyclic manner in a unit
of m tracks (m is an integer of 2 or greater) with an
encoded image signal being recorded on $n \times m/2$ tracks
per one frame, wherein the halfway recording is
performed in a unit of $n \times m$ tracks.

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11. A recording apparatus, comprising:
signal processing means for cyclically
processing an input image signal in a period of n
frames (n is an integer of 2 or greater);

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additional information generation means for
generating additional information whose contents
cyclically vary in the n-frame period of the image
signal;

recording means for forming a plurality of
20 tracks on a tape-shaped recording medium by using a
rotary head and for recording the image signal output
from said signal processing means and the additional
information generated by said additional information
generation means on m tracks (m is an integer of 1 or
25 greater) out of the tracks for one frame; and

control means, in response to a direction to
end the recording, for controlling said recording

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means to terminate the recording at the final track of $n \times m$ tracks on which the image signal for n frames is recorded in a cyclic manner.

5 12. An apparatus according to claim 11, further comprising detection means for detecting a phase of a track onto which recording is being executed by said recording means within the $n \times m$ tracks, based on the additional information recorded by said recording
10 means, wherein said control means controls said recording means based on a result of detection obtained by said detection means.

15 13. An apparatus according to claim 1, wherein said signal processing means includes a memory for recording the image signal of the n frames, and the control means controls said recording means to terminate the recording at the final track based on a read-out address of said memory.

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 14. An apparatus according to claim 1, wherein the additional information is track pair number information that increases by a predetermined value every two tracks in a cycle of the n frames.

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 15. An apparatus according to claim 1, further comprising processing phase detection means for

10091460-030702

detecting a processing phase of said signal
processing means in the n-frame period, wherein said
control means controls said recording means to
terminate the recording at the final track, based on
5 a result of detection obtained by said processing
phase detection means.

16. An apparatus according to claim 1, wherein
said signal processing means encodes the input image
10 signal in accordance with SD High Compression
Specifications defined by HD Digital VCR Conference,
and said recording means records the encoded image
signal on the tape-shaped recording medium in
accordance with the SD High Compression
15 Specifications.

17. A recording apparatus for forming a
plurality of tracks on a tape-shaped recording medium
by using a rotary head and for recording an image
20 signal obtained by cyclically processing an input
image signal in a cycle of n frames (n is an integer
of 2 or greater) by a signal processing circuit and
additional information whose contents cyclically vary
in the n-frame period of the image signal on m tracks
25 (m is an integer of 1 or greater) out of the tracks
for one frame, wherein, in response to a direction to
end the recording, the recording is terminated at the

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final track of $n \times m$ tracks on which the n -frame
image signal is recorded in a cyclic manner.

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